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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,595	04/22/2004	Cesar A. Galindo-Legaria	MSFT-3957/160078.02	6876

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WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)
CIRA CENTRE, 12TH FLOOR
2929 ARCH STREET
PHILADELPHIA, PA 19104-2891

EXAMINER
MIZRAHI, DIANE D

ART UNIT	PAPER NUMBER
2165	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/829,595	GALINDO-LEGARIA ET AL.
	Examiner	Art Unit	
	Diane Mizrahi	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 October 2007</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *34-41,43-45,47,49-51,53-57 and 59-96* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>59-66</u> is/are allowed.

6)☒ Claim(s) *34-41,43-45,47,49-51,53-57 and 67-96* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>22 April 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

This is response to Applicant's amendment filed 10-24-2007. Claims 39-41, 43-45, 47, 49-51, 53-57, 59-96 are pending. Claims 42, 46, 48, 52 and 58 have been canceled. Based on Applicant's newly submitted amendment and request for continued examination of 10-24-2007, a new office action is established below:

Request for Continued Examination

This is in response to request for amendments filed October 24, 2007 Continued Examination Under 37 CFR .1.114. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 24, 2007 has been entered.

Specification

The specification is objected to for failing to provide proper antecedent basis for the claimed subject matter of claims 67-96. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Claims 67-96   the originally filed specification recites **"A computer-readable**

storage medium". There is no mention of a "computer-readable storage medium"

in the original specification. Appropriate correction is required.

Consideration of Claim Rejections under 35 USC § 101

Examiner considered claim rejections under 35 USC § 101 for claims 34-38.

Applicant's particular "system" is according to applicant "system for implementing the

invention includes a general purpose computing device in the form of a computer 110.

Components of computer 110 may include, but are not limited to, a processing unit 120,

a system memory 130, and a system bus 121 that couples various system components

including the system memory to the processing unit 120."   (Specification, page 7, lines

3-9). Therefore, Examiner believes that no rejection under 35 USC § 101 is required.

Claims Rejections – 35 U.S.C. 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the
conditions and requirements of this title.

Claims 39-41, 43-45, 47, 49-51, 53-57, 67-96 are rejected under 35 U.S.C. 101,

because the claimed invention is directed to non-statutory subject matter.

Regarding Claims 39-41, 43-45, 47, 49-51, and 53-57, the claims are rejected as falling under the judicial exception of an abstract idea which lacks a useful, concrete, and tangible result. A claimed series of steps or acts for which there does not appear to be disclosed a result in a useful, concrete, and tangible result are not statutory within the meaning of 35 USC 101.

In the instant case, the claims recite, "_[determining]_," "_[performing]_," "_[sorting]_," and "__[identifying]_."

However, no useful, concrete, and tangible result is disclosed in the instant application as originally filed. For example, "transforming said data", "writing said data," "updating said data," "sending said data" being claimed at the end of the claim may comprise a useful, concrete, and tangible result. Absent such a disclosed result, however, the claims are not statutory.

Claims 67-96 recites **"a computer readable media"** which, according the specification of the instant Application may include **data structure, program modules, modulated data signal, carrier wave, transport mechanism, signals, RF, infrared, wireless media,** which are not statutory subject matter.

In the specification, page 7, lines 26-29 to page 8, lines 1-7, Applicant states:

"Computer storage media includes, but is not limited to, RAM, ROM, EEPROM, flash memory or other memory technology, CDROM, digital versatile disks (DVD) or

other optical disk storage, magnetic cassettes, magnetic tape, magnetic disk storage or

other magnetic storage devices, or any other medium which can be used to store the

desired information and which can accessed by computer 110. Communication media

typically embodies computer readable instructions, data structures, program modules or

other data in a modulated data signal such as a carrier wave or other transport

mechanism and includes any information delivery media. The term "modulated data

signal" means a signal that has one or more of its characteristics set or changed in such

a manner as to encode information in the signal. By way of example, and not limitation,

communication media includes wired media such as a wired network or direct-wired

connection, and wireless media such as acoustic, RF, infrared and other wireless

media. Combinations of any of the above should also be included within the scope of

computer readable media."

Appropriate action is required.

In the interest of compact prosecution, the application is further examined against

the prior art, as stated below, upon the assumption that the applicants may overcome

the above stated rejections under 35 U.S.C. 101.

Claim Rejections - 35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cochrane et al. (U.S. Patent# 6,847,962 B1 and Cochrane hereinafter) in view of Bhargava et al. (U.S. Patent# 5,701,454 and Bhargava hereinafter).

Regarding Claim 34, Cochrane teaches providing a spooling module (i.e. database services module including the data buffer manager) (Col 4, lines 18-23) receives a relational set of rows and a set of columns (i.e. relational database) (Examiner notes that the relational database is a collection of relations called tables. A relation is defined as a set of tuples that all have the same attributes. This is usually represented by a table, which is organized into rows and columns. Therefore a relational set of rows and columns are tables in a relational database that contains rows and columns) (Figure 1, item 116), which copies one row having common values of one column in said relation (i.e. values in a particular column) (Col 5, lines 1-6) and

providing an application module (i.e. such as relational database modules, which is a sub-module of the database services modules) (Col 4, lines 18-21) which invokes a relational procedure (i.e. operations) (Col 14, line 11) see also (i.e. relational operations) (Col 5, line 51) (Examiner notes that operations are series of actions, acts or

operations) (i.e. invoked) (Col 9, line 8) said relational procedure (Col 5, line 51 and Col

14, line 11) on rows (i.e. set of rows) (Col 19, line 29)   in memory (Col 4, lines 27-31)

and spooling module (i.e. database services module including the data buffer manager)

(Col 4, lines 18-23) .

Cochrane does not expressly teach unable to produce result rows.

Bhargava teaches unable to produce result rows (i.e. rows with nulls with

attributes not present in the relation) (Col 6, lines 3-6).

It would have been obvious to a person of ordinary skill in the art at the time of

Applicant's invention to modify the teachings of Cochrane with the teachings of

Bhargava to include unable to produce result rows with the motivation to distinguish

between real and virtual attributes to emphasize the difference between the real

attributes for manipulation to the user and the virtual attributes for bookkeeping

purposes (Bhargava, Col 4, lines 46-50) and allows for users to formulate relational

operations on tables interactively and to allow the user to manipulate the data

(Bhargava, Col 1, lines 23-29).

Regarding Claim 35, Cochrane teaches a query compiler (i.e. optimize the SQL

query) (Col 4, lines 61-63) and produces expression trees (i.e. expressions are

represented as trees) (Col 17, lines 14-19) relational procedure based on the (i.e.

relational operations) (Col 5, line 51) expression tree (Col 17, lines 14-19).

Regarding Claim 36, Cochrane teaches expression trees (i.e. expressions are represented as trees) (Col 17, lines 14-19) having a join operator (i.e. join predicate) (Col 5, lines 50-59) and a optimization module (Col 4, lines 61-63) and a predicate (i.e. join predicate) (Col 5, line 59) and relational rows i.e. relational database) (Examiner notes that the relational database is a collection of relations called tables. A relation is defined as a set of tuples that all have the same attributes. This is usually represented by a table, which is organized into rows and columns. Therefore a relational set of rows and columns are tables in a relational database that contains rows and columns) (Figure 1, item 116).

Cochrane does not expressly teach a first operand and second operand.

Bhargava teaches firs and second operand (i.e. one of the operands of the notation is used to represent the corresponding attribute from the other operand). (Examiner notes that the other operand is the second operand) (Col 11 lines 10-16)

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Cochrane with the teachings of Bhargava to include first operand and second operand with the motivation to distinguish between real and virtual attributes to emphasize the difference between the real attributes for manipulation to the user and the virtual attributes for bookkeeping

purposes (Bhargava, Col 4, lines 46-50) and allows for users to formulate relational

operations on tables interactively and to allow the user to manipulate the data

(Bhargava, Col 1, lines 23-29).

Regarding Claim 37, Cochrane teaches wherein said relational comprises a join

(Col 2, lines 33-44).

Regarding Claim 38, Cochrane does not expressly teach inner join.

Bhargava teaches inner join (Abstract) (see also Col 8, line 20).

It would have been obvious to a person of ordinary skill in the art at the time of

Applicant's invention to modify the teachings of Cochrane with the teachings of

Bhargava to include inner join with the motivation to distinguish between real and virtual

attributes to emphasize the difference between the real attributes for manipulation to the

user and the virtual attributes for bookkeeping purposes (Bhargava, Col 4, lines 46-50)

and allows for users to formulate relational operations on tables interactively and to

allow the user to manipulate the data (Bhargava, Col 1, lines 23-29).

Double Patenting

A rejection based on double patenting of the "same invention" type finds its

support in the language of 35 U.S.C. 101 which states that "whoever invents or

discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer <u>cannot</u> overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 34-38, 43-45, 47, 50-51 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 97-106, and 108-109 of copending Application No. 10/998,761. This is a <u>provisional</u> double patenting rejection since the conflicting claims have not in fact been patented.

The mapping of the claims is listed below:

US Application 10/998,876	Current Application 10/852,595
Claims 97-106, 108-109:	**Claims 34-38,43-45,47,50-51:**
Claim 97	Claim 34
Claim 98	Claim 35

Claim 99	Claim 36
Claim 100	Claim 37
Claim 101	Claim 38
Claim 102	Claim 43
Claim 103	Claim 44
Claim 104	Claim 45
Claim 105	Claims 47 and 49
Claim 106	Claim 47
Claim 108	Claim 50
Claim 109	Claim 51

Examiner's note to the Applicant:

According to MPEP (2111.02 [R-3] - Effect of Preamble),

"The determination of whether a preamble limits a claim is made on a case-by-case basis in light of the facts in each case; there is no litmus test defining when a preamble limits the scope of a claim. Catalina Mktg. Int 'l v. Coolsavings.com, Inc., 289 F.3d 801, 808, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002). See id. at 808-10, 62 USPQ2d

at 1784-86 for a discussion of guideposts that have emerged from various decisions

exploring the preamble's effect on claim scope, as well as a hypothetical example

illustrating these principles."

"[A] claim preamble has the import that the claim as a whole suggests for it." Bell

Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615,

620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). "If the claim preamble, when read in

the context of the entire claim, recites limitations of the claim, or, if the claim preamble is

necessary to give life, meaning, and vitality' to the claim, then the claim preamble

should be construed as if in the balance of the claim." Pitney Bowes, Inc. v. Hewlett-

Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999).

Allowable Subject Matter

Claims 39-41, 43-45, 47, 49-51, 53-57 and 67-96 would be allowable if rewritten

or amended to overcome the rejection(s) under 35 U.S.C. 101 and double patenting

rejection, set forth in this Office action.

Regarding Independent Claims 39, the limitations directed at the "predicate " in

respect to of equally comparison between columns in the relation including the first

instance and second instance having relational instances and segmenting a common

relation which separates a semijoin in combination with the other limitations of the

claims, was not disclosed by, would not have been obvious over, nor would have been

fairly suggested by the prior art of record, in context to the claims and the specification.

Regarding Independent Claims 43, the limitations directed at the "predicate " in

respect to of equally comparison between columns in the relation including the first

instance and second instance having relational instances and segmenting a common

relation which separates a anti -semijoin in combination with the other limitations of the

claims, was not disclosed by, would not have been obvious over, nor would have been

fairly suggested by the prior art of record, in context to the claims and the specification.

Regarding Independent Claims 47 and 53 , the limitations directed at the

segmenting second set of columns which has rows having common values in second

column set, sorting based on values of first set of columns and performing segmenting

without spooling rows of segments in combination with the other limitations of the

claims, was not disclosed by, would not have been obvious over, nor would have been

fairly suggested by the prior art of record, in context to the claims and the specification.

Regarding Independent Claim 67, the limitations directed at "predicate " in

respect to of equally comparison between columns in the relation including the first

operand and second operand having relational instances and segmenting a common

relation which segments a relation according to values in the columns which applies to

the join operator to each segment to each relation and which identifies an expression

tree having a join operator in combination with the other limitations of the claims, was

not disclosed by, would not have been obvious over, nor would have been fairly

suggested by the prior art of record, in context to the claims and the specification.

Regarding Independent Claim 79, the limitations directed at "predicate and first

and second join" in respect to a first operand of a first relation with rows and columns,

second operand of the first relation, a first predicate with equality comparison between

columns of first relation and columns of first relation of second instant and second join

which has third operant of first join, fourth operand of second relation, a second

predicate performing a join of second relation using second predicate producing an

intermediate result, segmenting intermediate result, and applying first join operator with

first predicate separated into segments in combination with the other limitations of the

claims, was not disclosed by, would not have been obvious over, nor would have been

fairly suggested by the prior art of record, in context to the claims and the specification.

Regarding Independent Claim 93, the limitations directed at "predicate and first

expression which has a relational join" in respect to first operand relational expression

having a join having a first relation, second operand calling a relational fragment

successively to second of second relation based on column values of second relation, a

predicate of second relational expression having a relational fragment of third relation

fragments and values and resulting into a join having a first, second relation and

predicate and evaluating a second relational expression in combination with the other

limitations of the claims, was not disclosed by, would not have been obvious over, nor

would have been fairly suggested by the prior art of record, in context to the claims and the specification.

The dependent claims, being further limiting to the independent claims, definite and enabled by the Specification are also allowed. The closest prior art fails to anticipate or render Applicant's limitations above obvious.

Claims 59-66 are allowed over the prior art made of record.

Regarding Independent Claim 59, the limitations directed at "predicate " in respect to of equally comparison between columns in the relation including the first operand and second operand having relational instances and segmenting a common relation which segments a relation according to values in the columns which applies to the join operator to each segment to each relation and which identifies an expression tree having a join operator in combination with the other limitations of the claims, was not disclosed by, would not have been obvious over, nor would have been fairly suggested by the prior art of record, in context to the claims and the specification.

Other Prior Art Made of Record

The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. U.S. patents and U.S. patent application publications will not be supplied with Office actions.   Examiners advises the Applicant that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are

available on the USPTO web site (www.uspto.gov), from the Office of Public Records

and from commercial sources. For the use of the Office's PAIR system, Applicants may

refer to the Electronic Business Center (EBC) at http://www.uspto.gov/ebc/index.html or

1-866-217-9197.

Conclusion

Any inquiry concerning this communication or earlier communications

from the examiner should be directed to Diane D. Mizrahi whose telephone number is

571-272-4079. The examiner can normally be reached on Monday-Thursday (9:30 -

4:30 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Christian Chase can be reached on (571) 272-4190. The fax phone

numbers for the organization where this application or proceeding is assigned are (703)

872-9306 for regular communications and (703) 305-3900 for After Final

communication.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (571) 272-

2100.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system.   Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.qov.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll free).

/Diane Mizrahi/
Diane.Mizrahi@USPTO.gov
Primary Patent Examiner
Technology Center 2100

January 8, 2008